

In the claims:

1-20. (cancelled)

21. (previously presented) A reactor comprising:

an inner metal wall, and

a floating lining comprising a plurality of reinforced fluoropolymer plates said plates comprising a layer of fluoropolymer on one of its faces, and a sheet of carbon fibers on the other face, at least part of the sheet of carbon fibers being impregnated with fluoropolymer, said plates being butt-welded together, said floating lining being situated on all or part of the inner wall of the reactor, the face of the lining comprising carbon fibers free from fluoropolymer being positioned against the inner metal wall of the reactor.

22. (previously presented) The reactor as claimed in claim 21, additionally comprising:

a plurality of orifices in the inner wall, connected to a network of pipes;

a pressure-regulating device connected to the network of pipes maintaining the pressure inside the space between the fluoropolymer layer and the lower inner wall at the pressure existing inside the reactor.

23. (previously presented) The reactor as claimed in claim 21, in which the polymer-impregnated thickness of the plates represents at least 10% of the thickness of the sheet of carbon fibers.

24. (previously presented) The reactor as claimed in claim 23, in which the polymer-impregnated thickness of the plates represents 10% to 90% of the thickness of the sheet of carbon fibers.

25. (previously presented) The reactor as claimed in claim 21, in which the fluoropolymer is chosen from the group consisting of polychlorotrifluoroethylene (PCTFE), polyvinylidene fluoride (PVDF), copolymers of tetrafluoroethylene and perfluoropropene (FEP), copolymers of tetrafluoroethylene and perfluoropropylvinylether (PFA), copolymers of tetrafluoroethylene and ethylene (ETFE), polymers of trifluorochloroethylene and ethylene (E-CTFE) and blends thereof.

26. (previously presented) The reactor as claimed in claim 21, in which the fluoropolymer is the copolymer of tetrafluoroethylene and hexafluoropropylene (FEP).

27. (previously presented) The reactor as claimed in claim 21, in which the total thickness having said plates lies between 1 and 20 mm.

28. (previously presented) The reactor as claimed in claim 27, in which the total thickness of the plates lies between 2 and 5 mm.

29. (previously presented) The reactor as claimed in claim 21, in which the sheet of carbon fibers is in the form of a woven or nonwoven sheet

30. (previously presented) The reactor as claimed in claim 21, in which the sheet of carbon fibers is in the form of a sheet of crossed carbon fibers.

31. (previously presented) The reactor as claimed in claim 21, in which the sheet of carbon fibers has a thickness of between 0.1 and 10 mm.

32. (previously presented) The reactor as claimed in claim 31, in which the sheet of carbon fibers has a thickness of between 0.5 and 3 mm.

33. (previously presented) The reactor as claimed in claim 21 wherein said plates comprising:

- a layer of fluoropolymer on one of the faces of the plate,
- a layer of carbon fibers free from fluoropolymer on the other face of the plate, and
- a central layer consisting of carbon fibers impregnated with fluoropolymer.

34-59. (cancelled)

60. (withdrawn) A method for producing a reactor as claimed in claim 21, provided with a floating lining, comprising:

- providing at least one reinforced fluoropolymer plate comprising a layer of fluoropolymer on one of its faces, and a sheet of carbon fibers on the other face, at least part of the sheet of carbon fibers being impregnated with fluoropolymer;

cutting out and forming this plate inside a metal reactor, the face covered with carbon fiber fabric being in contact with the metal wall of the reactor;  
where appropriate, butt-welding the cut-outs of said at least one plate.

61. (cancelled)

62. (withdrawn) A fluorination method in the liquid phase, in which said reaction is performed in a reactor as claimed in claim ~~claims~~ 21.

63. (withdrawn) The fluorination method as claimed in claim 62, in which the temperature lies between 60 and 150° C.

64-65. (cancelled)